REMARKS

The present response is intended to be fully responsive to all points of rejection raised by the instant Office Action, and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Status of Claims

Claims 1 – 6 and 8 – 14 are pending in the application and are rejected. Claims 1 - 3, 5, 9, 10, 12, and 14 are amended herewith.

CLAIM REJECTIONS

35 U.S.C. § 102 Rejections

Claims 1 – 3, 5 – 6, 8 – 10, and 12 – 14 have been rejected under 35 U.S.C. § 102(b), as being anticipated by "DCS-1: A Fuzzy Logic Expert System for Automatic Defect Classification of Semiconductor Wafer Defects" to Luria, et al. (hereinafter "Luria"). Applicant respectfully traverses the rejection in view of the remarks that follow.

Claim 1, as amended herewith, recites, *inter alia*:

"...applying a plurality of *class-versus-class rules* to a defect image, wherein any of said rules is operative to classify said defect image to one class of a class pair taken from a plurality of class pairs, *and wherein any of said classes are associated with at least two of said rules, each rule pairing said class with a different other one of said classes*..." (emphasis added)

Applicant respectfully submits that Luria does not teach the application of "class-versus-class" rules, nor that defect images are classified to "to one class of a class pair taken from a plurality of class pairs" as recited in claim 1.

In Luria, "an expert system, with rules defined locally by the FAB engineer, determines the class of each defect" (page 2101, para. 3, lines 16-18). While Luria relates

to a plurality of classes, Luria makes no reference to "a plurality of class pairs" as recited in claim 1. Indeed, Luria clearly states that "each of the rules...corresponds to one of the classes in a particular level" (page 2103, para 5.4, lines 1-2). Thus, Luria applies n rules for n classes. Thus, by definition, *each of Luria's rules are applied regarding a single class, resulting in a decision to classify to a single class or not*.

In contradistinction to Luria, every rule of the present invention as recited in claim 1 is potentially pitted one class against another, such that the total number of such rules is n*(n-1)/2 for n classes. Thus, *each of the rules of the present invention are applied regarding a pair of classes, resulting in a decision to classify to one class or the other.* Claim 1 has been further amended to emphasize this, and now recites, *inter alia*, "wherein any of said classes are associated with at least two of said rules, each rule pairing said class with a different other one of said classes," which clearly teaches a potential of n*(n-1)/2 rules.

Claim 1 further recites, *inter alia*:

"...determining to which of said classes said defect image is classified the greatest number of times subsequent to the application of said rules."

Luria's states: "After all the rules have been evaluated, the classification with the highest truth value is displayed" (page 2103, para. 5.5, lines 1-3). Luria assumes the evaluation and comparison of n fuzzy-truth values, where n is the number of classes. Thus, Luria tests the results of the application of n rules. In contradistinction, the present invention as recited in claim 1 tests the results of the application of "said rules" – namely, n*(n-1)/2 "class-versus-class rules."

In view of the above, Applicant respectfully submits that claim 1 is not anticipated by Luria, and is therefore deemed allowable. Claims 2 –6 and 8 depend directly or indirectly from independent claim 1, and are, *a fortiori*, deemed allowable. Claim 9, including the elements of claim 1 recited in method form, is likewise deemed allowable.

Claims 10 and 12 – 13 depend directly or indirectly from independent claim 9, and are, *a fortiori*, deemed allowable. Claim 14, including the elements of claim 1 recited in Beauregard-claim form, is likewise deemed allowable. Applicant therefore requests that the rejection of claims 1 – 3, 5 – 6, 8 – 10, and 12 - 14 under 35 U.S.C. §102(b) be withdrawn.

35 U.S.C. § 103 Rejections

Claims 1 – 6 and 8 – 14 have been rejected under 35 U.S.C. §103(a), as being unpatentable over "Automated Feature Extraction for Supervised Learning. NASA Ames Research Center, Moffett Field, CA 94035-1000 (U.S.A.), © 1994 IEEE" to Laird, et al. (hereinafter "Laird") in view of Luria. Applicant respectfully traverses the rejection in view of the remarks that follow.

Laird describes a method for determining the best features to extract from a vector of attribute values of an object type in order to optimize real-timer classification. Laird does not describe classification techniques. See (emphasis added):

- "...*we developed a GP-based algorithm to extract features* in a variety of domains and *for most classification methods*, including decision trees, feed-forward neural networks, and Bayesian classifiers" (page 674, lines 19 – 20);
- "In this paper we define formally our feature-construction method..." (page 674, line 30);
- "Hopefully the resulting classifier will generalize correctly...; *appropriate generalization criteria are an important topic but outside the scope of this paper*." (page 675, lines 5 – 6);
- "...we use GP to construct useful features..." (page 675, line 19);
- "*The features we construct can be used as inputs to any of a variety of feature-driven classifiers*..." (page 675, lines 20 – 21);
- "Consider how we might construct a set of features for a classifier." (page 675, line 29).

Thus, Laird relates solely to determining which features should be used for classification, and *does not care what type of classification method is used*. Nowhere does Laird describe "applying a plurality of class-versus-class rules to a defect image," nor to "classifying said defect image to one class of a class pair taken from a plurality of class pairs," nor that "any of said classes are associated with at least two of said rules, each rule pairing said class with a different other one of said classes" as recited in claims 1, 9, and 14.

As Laird clearly relates to methods of feature extraction, if it is the Examiner's position that Laird also describes the specific methods of classification disclosed in the present application, 37 CFR 1.104(c)(2) requires that "When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable." Applicant submits that the specific parts of Laird relating to features recited in claims 1 – 6 and 8 – 14 have not been designated as required, and therefore no obvious combination of Laird and Luria has been asserted.

Absent any evidence that the recited features of claims 1 – 6 and 8 – 14 are found in Laird, and in view of the arguments presented above with regard to the same features lacking in Luria, Applicant requests that the rejection of claims 1 – 6 and 8 – 14 under 35 U.S.C. §103(a) be withdrawn.

Conclusion

Applicant respectfully submits that entry of the instant amendment and consideration of the above remarks renders the present application in condition for allowance, which action Applicant respectfully solicits.

Petition For Two-Month Extension Of Time Under 37 CFR 1.136(a)

The period for responding to the instant Office Action was set to expire on October 27, 2005. Applicant hereby requests that the period for responding to the instant

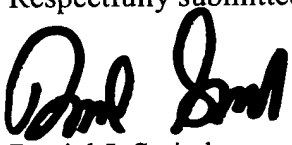
Office Action be extended by two (2) months, so as to expire on December 27, 2005. Accordingly, this response is being timely filed.

The fee for a Petition for a Two-Month Extension of Time is Two Hundred and Twenty-Five Dollars ($225.00) dollars for a small entity. No additional fees are believed due. The United States Patent and Trademark Office is hereby authorized to charge Deposit Account 501380 in the amount of $225.00 and any additional fee which is necessary in connection with the filing of this petition and response.

Favorable action on this amendment and petition is courteously solicited.

Dated: December 22, 2005

Respectfully submitted,



Daniel J. Swirsky
Agent for Applicant(s)
Registration No. 45,148

ALPHAPATENT ASSOCIATES LTD.
55 REUVEN ST.
BEIT SHEMESH, ISRAEL 99544
TEL. (US) 516-620-4573
FAX. (US) 206-374-6672
dswirsky@alphapatent.com